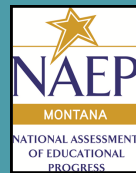


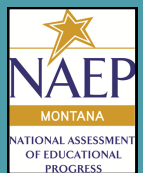
National Assessment of Educational Progress (NAEP)

300	
215	Advanced
175	Draw a conclusion about soil permeability using data—Partial (CR)
174	Describe the competition between two species—Complete (CR)
171	Identify a function of a human organ system (MC)
170	Proficient
167	Describe the evidence for chemical change—Partial (CR)
165	Describe the energy transfer between two systems—Complete (CR)
162	Read a motion graph (MC)
157	Draw a conclusion based on fossil evidence (MC)
156	Select and explain the useful properties of a material used in an industrial process—Partial (CR)
153	Predict a geological consequence of tectonic plate movement (MC)
151	Identify the mechanism of a weather pattern (MC)
148	Recognize a factor that affects the success of a species (MC)
141	Basic
136	Identify the sequence of formation of the Earth's features (MC)
134	Identify an example of kinetic energy (MC)
131	Predict the effect of an environmental change on an organism (MC)
128	Explain an experimental setup to study populations of organisms (MC)
127	Recognize how plants use sunlight (MC)
122	Explain the effects of human land use on wildlife—Partial (CR)
0	

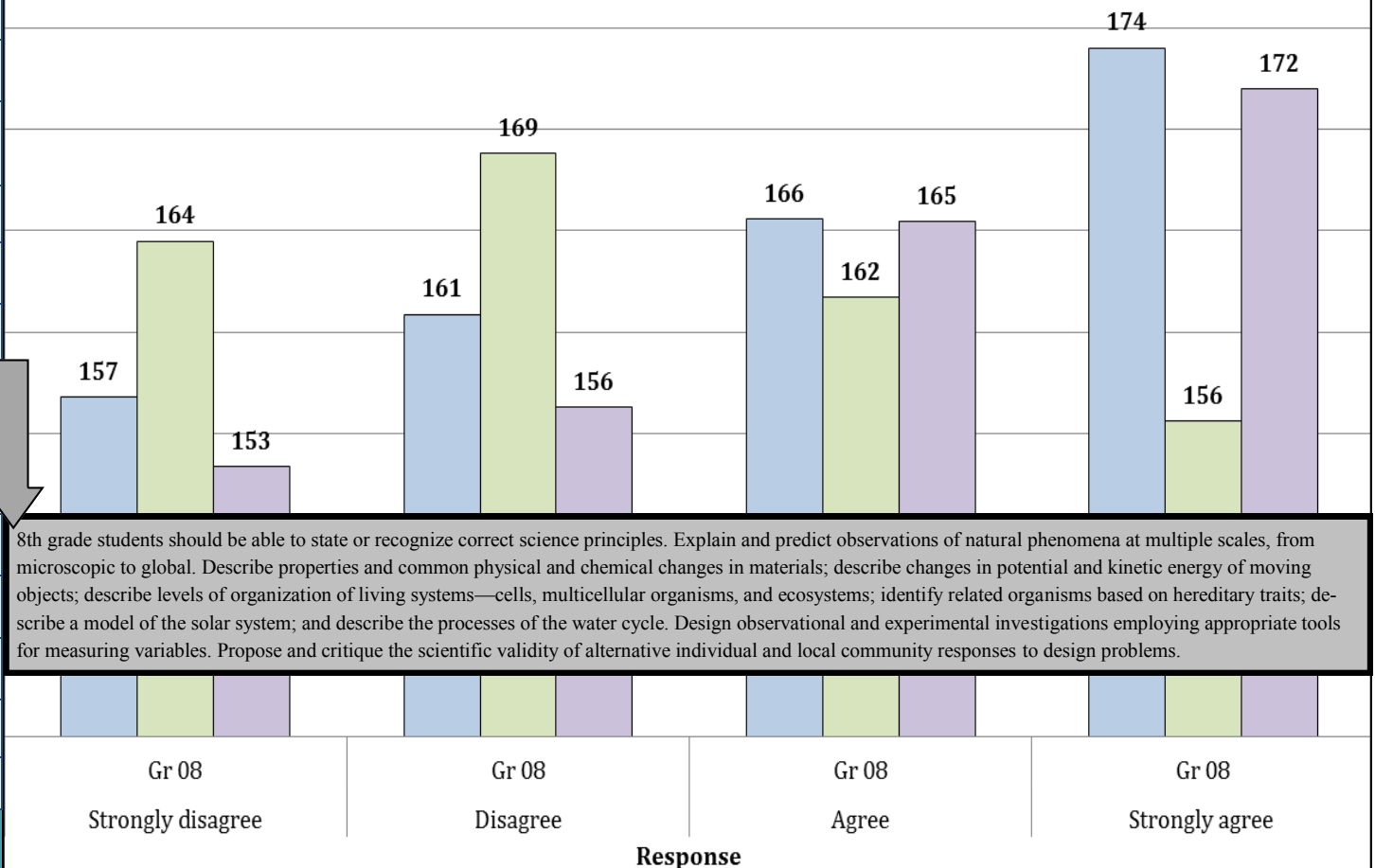
- Favorite - Overall Science - MT - 2011
- Future - Overall Science - MT - 2011
- Likes Science - Overall Science - MT - 2011



8th Grade NAEP Science Findings in Montana



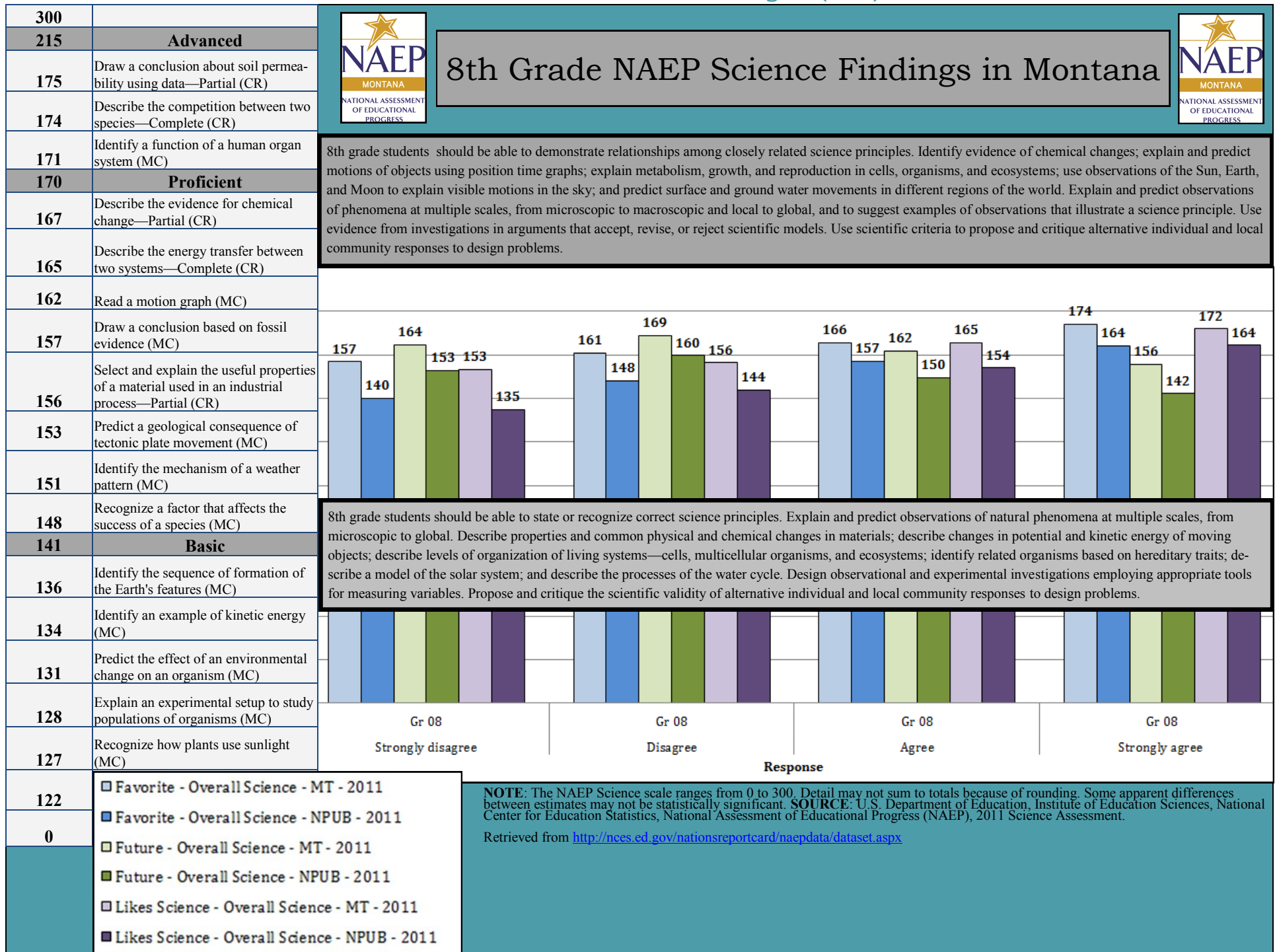
8th grade students should be able to demonstrate relationships among closely related science principles. Identify evidence of chemical changes; explain and predict motions of objects using position time graphs; explain metabolism, growth, and reproduction in cells, organisms, and ecosystems; use observations of the Sun, Earth, and Moon to explain visible motions in the sky; and predict surface and ground water movements in different regions of the world. Explain and predict observations of phenomena at multiple scales, from microscopic to macroscopic and local to global, and to suggest examples of observations that illustrate a science principle. Use evidence from investigations in arguments that accept, revise, or reject scientific models. Use scientific criteria to propose and critique alternative individual and local community responses to design problems.



NOTE: The NAEP Science scale ranges from 0 to 300. Detail may not sum to totals because of rounding. Some apparent differences between estimates may not be statistically significant. **SOURCE:** U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Science Assessment.

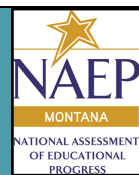
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National Assessment of Educational Progress (NAEP)

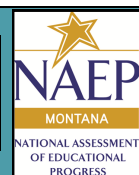


National Assessment of Educational Progress (NAEP)

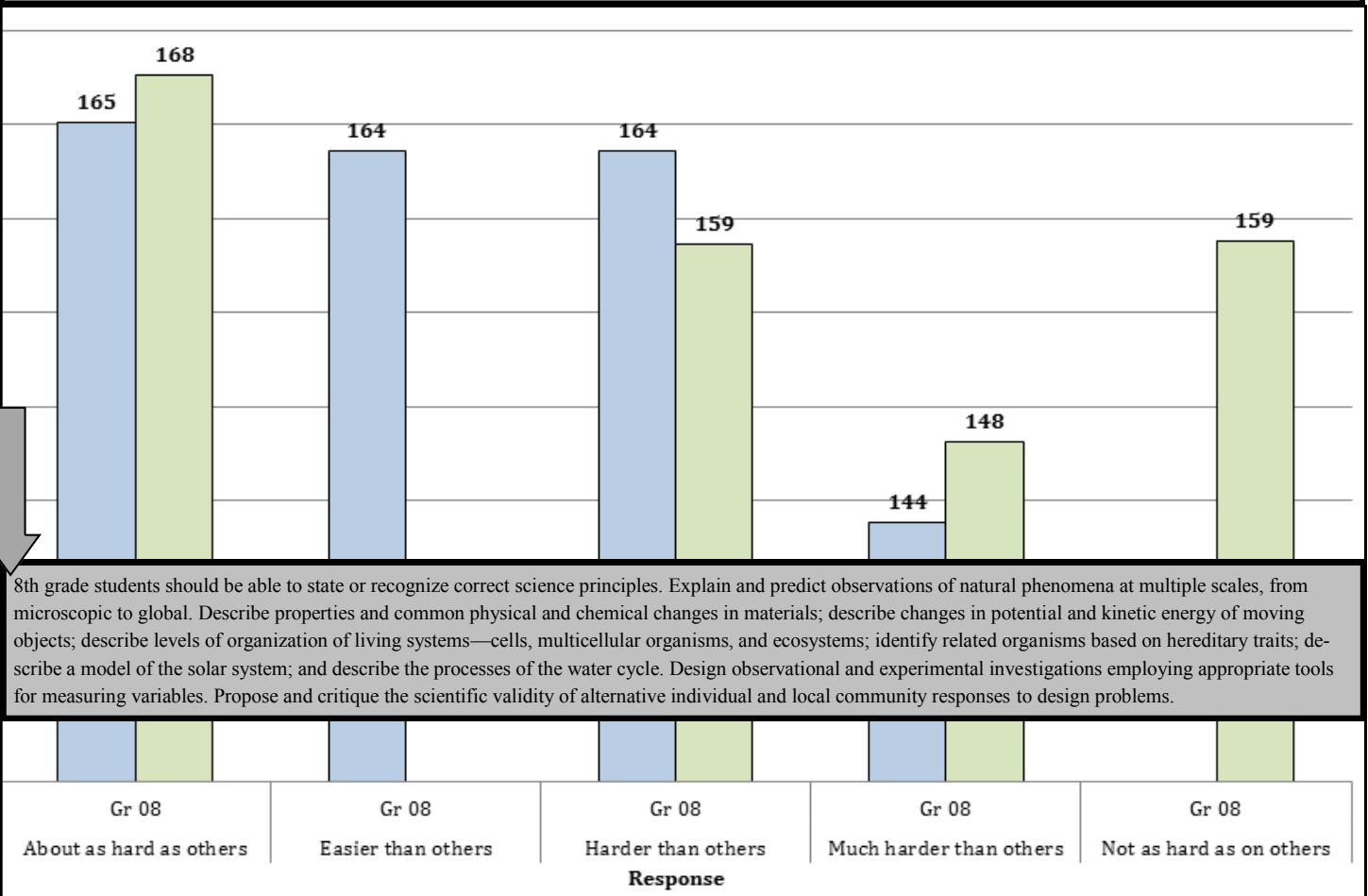
300	
215	Advanced
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128	Explain an experimental setup to study populations of organisms (MC)
127	Recognize how plants use sunlight (MC)
122	Explain the effects of human land use on wildlife—Partial (CR)
0	



8th Grade NAEP Science Findings in Montana



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8th grade students should be able to state or recognize correct science principles. Explain and predict observations of natural phenomena at multiple scales, from microscopic to global. Describe properties and common physical and chemical changes in materials; describe changes in potential and kinetic energy of moving objects; describe levels of organization of living systems—cells, multicellular organisms, and ecosystems; identify related organisms based on hereditary traits; describe a model of the solar system; and describe the processes of the water cycle. Design observational and experimental investigations employing appropriate tools for measuring variables. Propose and critique the scientific validity of alternative individual and local community responses to design problems.

■ Difficulty - Overall Science - MT - 2011

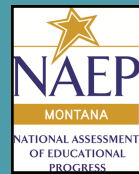
■ Effort - Overall Science - MT - 2011

NOTE: The NAEP Science scale ranges from 0 to 300. Detail may not sum to totals because of rounding. Some apparent differences between estimates may not be statistically significant. **SOURCE:** U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Science Assessment.

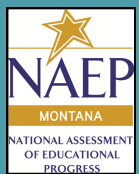
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National Assessment of Educational Progress (NAEP)

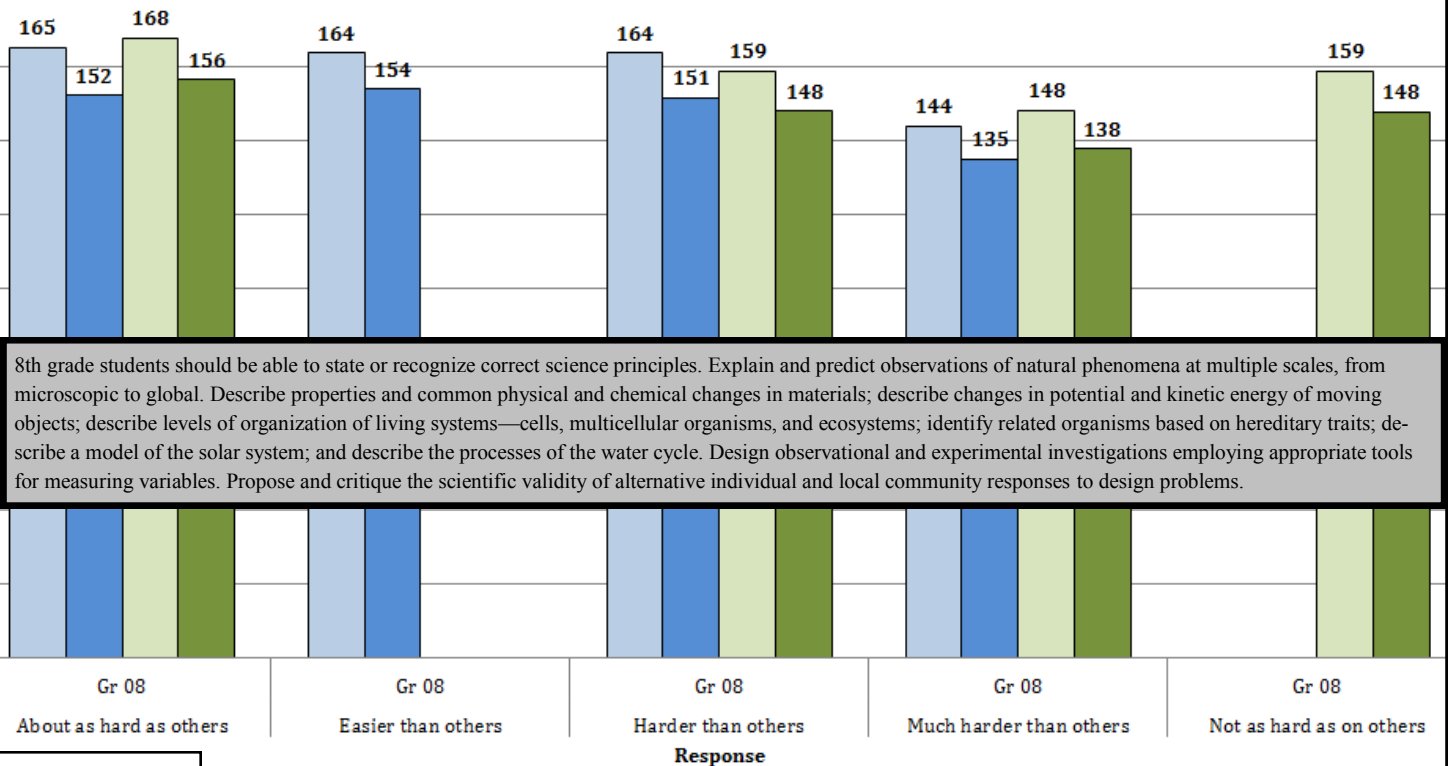
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131	Predict the effect of an environmental change on an organism (MC)
128	Explain an experimental setup to study populations of organisms (MC)
127	Recognize how plants use sunlight (MC)



8th Grade NAEP Science Findings in Montana



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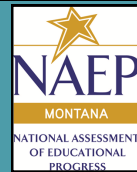
- Difficulty - Overall Science - MT - 2011
- Difficulty - Overall Science - NPB - 2011
- Effort - Overall Science - MT - 2011
- Effort - Overall Science - NPB - 2011

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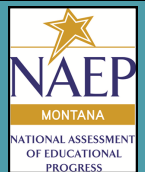
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National Assessment of Educational Progress (NAEP)

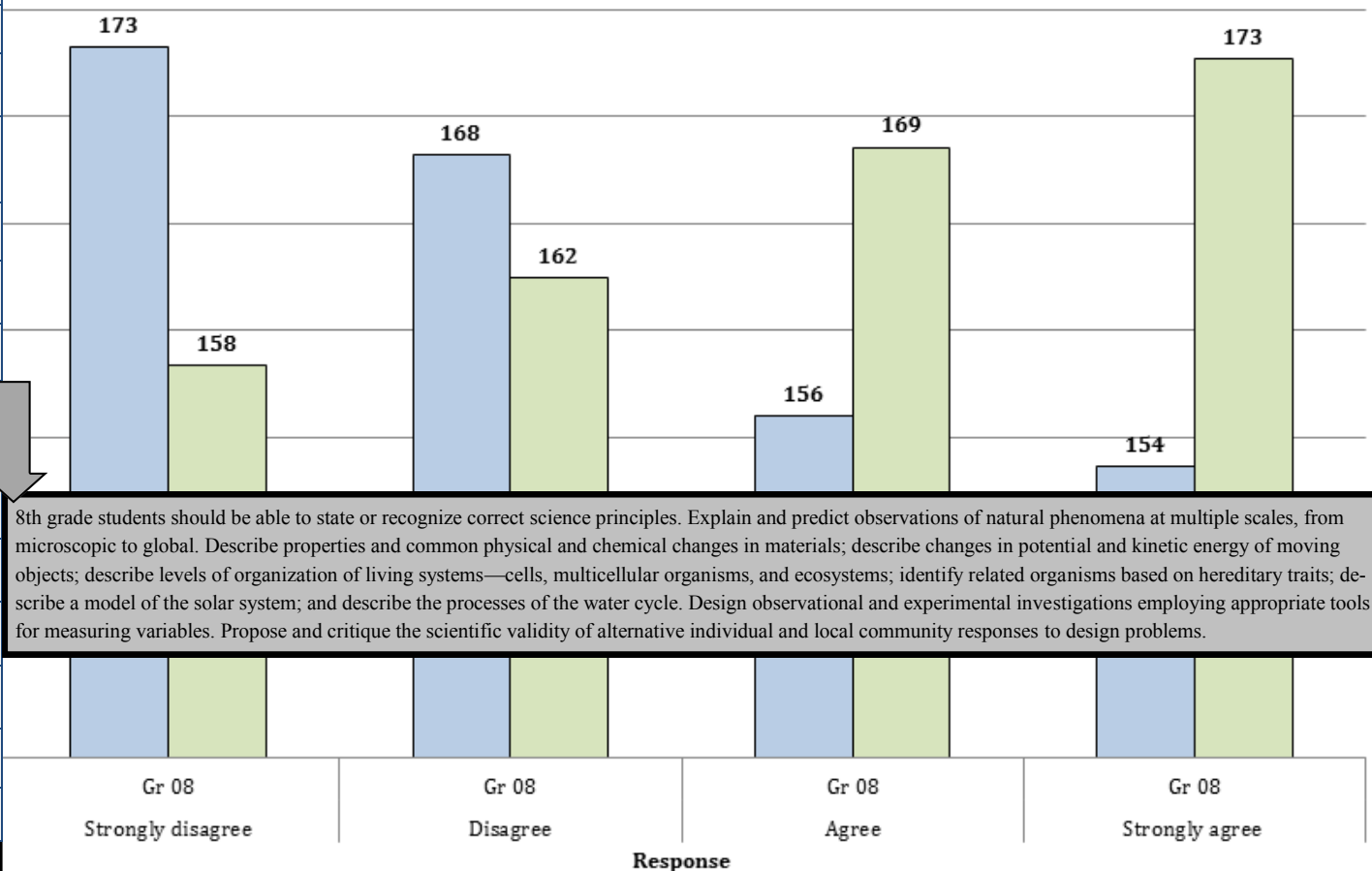
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127	Recognize how plants use sunlight (MC)
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0	



8th Grade NAEP Science Findings in Montana



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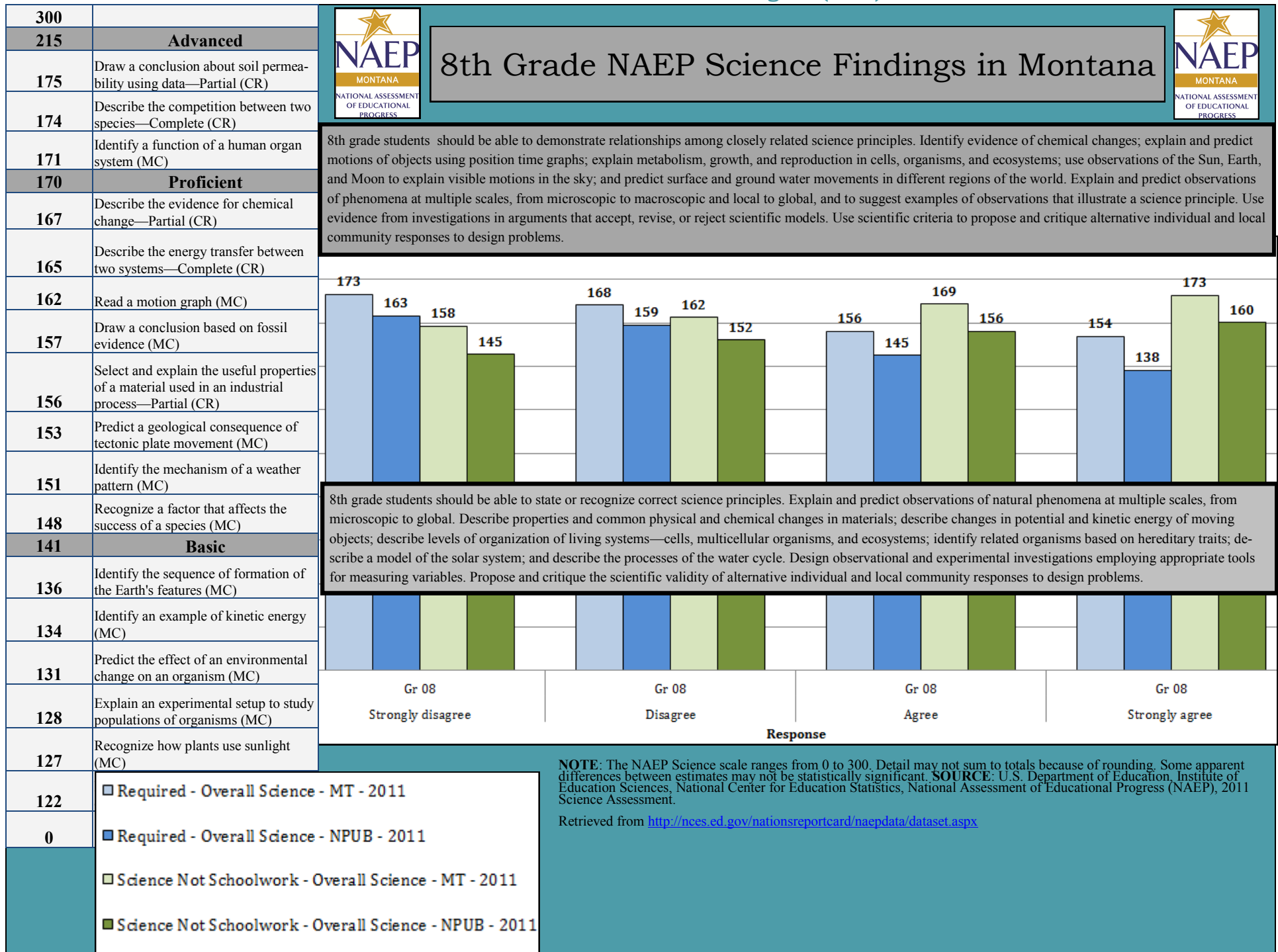
■ Required - Overall Science - MT - 2011

■ Science Not Schoolwork - Overall Science - MT - 2011

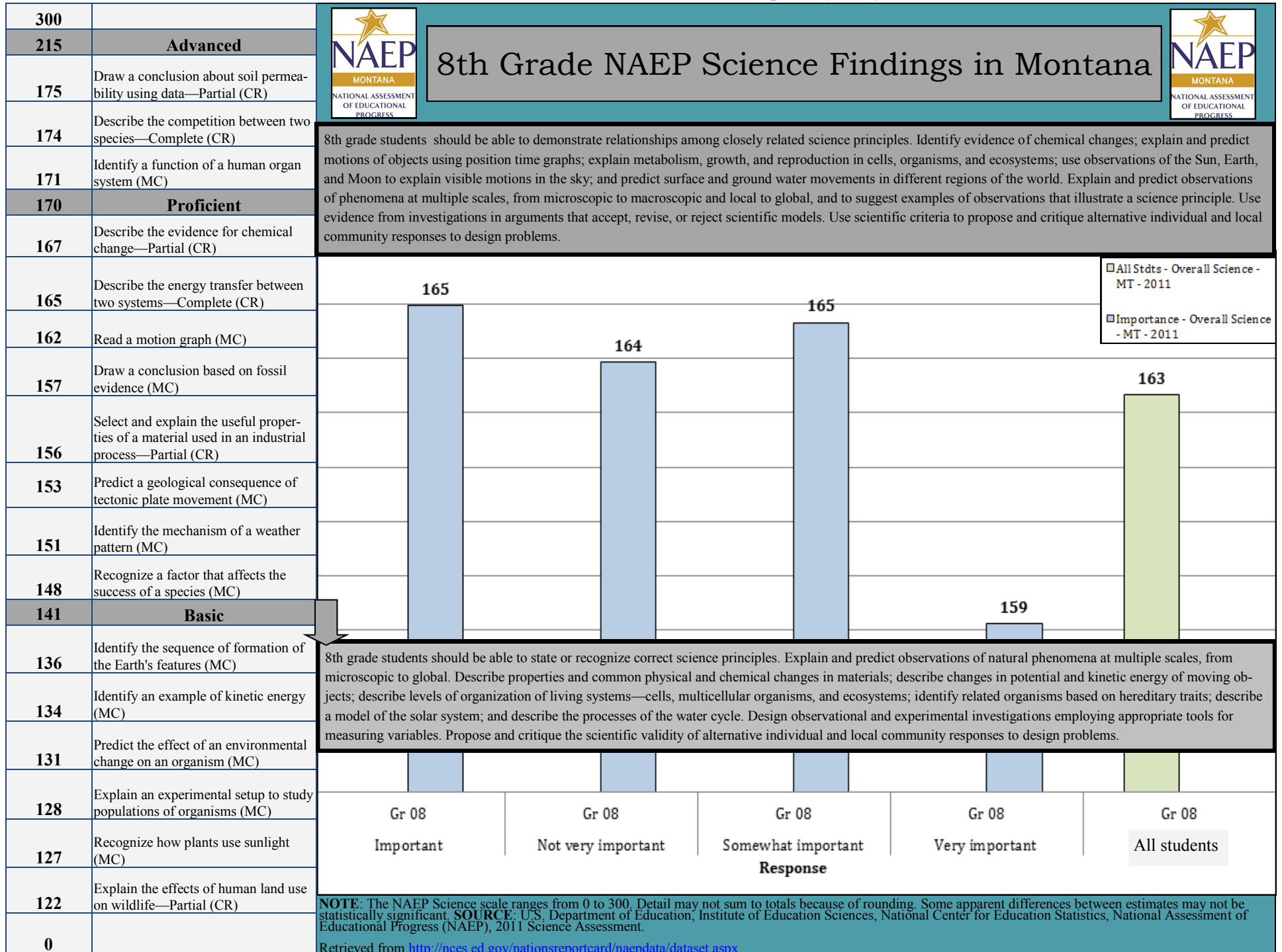
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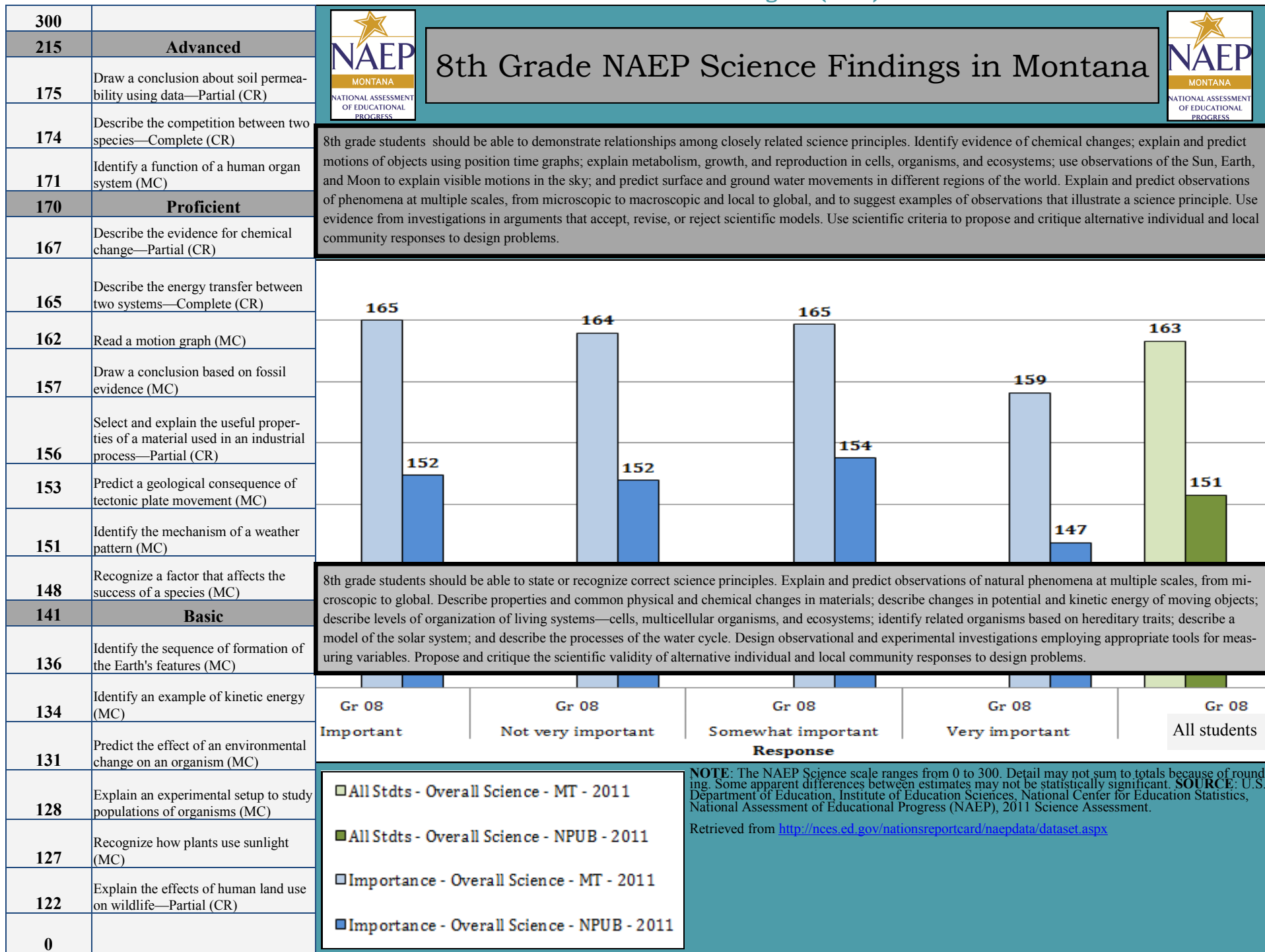
National Assessment of Educational Progress (NAEP)



National Assessment of Educational Progress (NAEP)



National Assessment of Educational Progress (NAEP)



National Assessment of Educational Progress (NAEP)

<http://nces.ed.gov/nationsreportcard/itemmaps/index.asp>

2011 Grade 8

NAEP Science Scale

Content Classifications:

● Earth & Space Sciences

■ Physical Science

▲ Life Science

300



290

- 287 Predict and explain a weather pattern due to collision of air masses—Complete (CR)

280

270

- 269 Describe the evidence for chemical change—Complete (CR)
- 266 [Identify chemically similar elements in the Periodic Table](#) (MC)
- ▲ 264 [Select and explain graph types and draw graphs from data that compare insect behaviors](#)—Complete (CR)

260

- 256 Explain the formation of a rock based on its features—Complete (CR)

250

- ▲ 247 [Form a conclusion based on data about the behavior of an organism](#)—Complete (CR)

240

- ▲ 231 [Select and explain graph types and draw graphs from data that compare insect behaviors](#)—Essential (CR)

230

- 224 Explain a change in energy due to friction (MC)
- 221 [Draw a conclusion about soil permeability using data](#)—Complete (CR)

220

- 215 Advanced**
- 214 Explain the effects of human land use on wildlife—Complete (CR)
- 213 [Predict a lunar phenomenon](#) (MC)
- 213 Predict and explain a weather pattern due to collision of air masses—Partial (CR)

210

- 208 Explain the formation of a rock based on its features—Essential (CR)
- 203 Select and explain the useful properties of a material used in an industrial process—Complete (CR)
- 201 Relate characteristics of air masses to global regions (MC)
- ▲ 200 [Select and explain graph types and draw graphs from data that compare insect behaviors](#)—Partial (CR)
- ▲ 200 Identify the main source of energy for certain organisms (MC)

200

- 198 [Identify the atomic components of the molecule](#) (MC)
- 195 Determine a controlled variable in a chemistry investigation (MC)
- 190 [Identify a source of energy for Earth's water cycle](#) (MC)

190

190

- 187 Predict the long-term pattern in the volcanic activity of a region (MC)
- 184 Recognize an effect of electrical forces (MC)
- 184 Explain the formation of a rock based on its features—Partial (CR)
- ▲ 183 Recognize that plants produce their own food (MC)
- 182 Select and explain the useful properties of a material used in an industrial process—Essential (CR)
- ▲ 180 [Form a conclusion based on data about the behavior of an organism](#)—Partial (CR)

180

- 175 [Draw a conclusion about soil permeability using data](#)—Partial (CR)
- ▲ 174 Describe the competition between two species—Complete (CR)
- ▲ 171 Identify a function of a human organ system (MC)
- 171 Investigate the magnetic properties of some common objects (MC)

170 Proficient

170

- 167 Describe the evidence for chemical change—Partial (CR)
- 165 Describe the energy transfer between two systems—Complete (CR)
- 162 Read a motion graph (MC)

160

- 157 Draw a conclusion based on fossil evidence (MC)
- 156 Select and explain the useful properties of a material used in an industrial process—Partial (CR)
- 153 [Predict a geological consequence of tectonic plate movement](#) (MC)
- 151 Identify the mechanism of a weather pattern (MC)

150

- ▲ 148 Recognize a factor that affects the success of a species (MC)

141 Basic

140

- 136 Identify the sequence of formation of the Earth's features (MC)
- 134 Identify an example of kinetic energy (MC)
- ▲ 131 [Predict the effect of an environmental change on an organism](#) (MC)

130

- ▲ 128 Explain an experimental setup to study populations of organisms (MC)
- ▲ 127 Recognize how plants use sunlight (MC)
- 122 Explain the effects of human land use on wildlife—Partial (CR)

120



0

Content Classifications:

● Earth & Space Sciences

■ Physical Science

▲ Life Science

Blue highlight= hyperlink to NAEP released item